



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Joseph E. Kernan
Governor

Lori F. Kaplan
Commissioner

November 7, 2003

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.in.gov/idem

TO: Interested Parties / Applicant

RE: Pilkington North America, Inc. / MSOP 145-14878-00020

FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FNPER.dot 9/16/03



Frank
O'Bannon
Governor

100 North Senate Avenue
P. O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
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MINOR SOURCE OPERATING PERMIT OFFICE OF AIR QUALITY

**Pilkington North America, Inc.
300 Northridge Drive
Shelbyville, Indiana 46176**

(herein known as the Permittee) is hereby authorized to *construct and* operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this permit.

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Operation Permit No.: MSOP 145-14878-00020	
Issued by: Original signed by Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: November 7, 2003 Expiration Date:

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SECTION A

SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 and A.2 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]

The Permittee owns and operates stationary automobile glass fabrication plant that produces automotive glass products.

Authorized Individual: Peter J. Clark, Assistant Plant Manager.
Source Address: 300 Northridge Drive, Shelbyville, Indiana 46176
Mailing Address: 300 Northridge Drive, Shelbyville, Indiana 46176
General Source Phone: (317) 392-7000
SIC Code: 3231
County Location: Shelby
Source Location Status: Attainment for all criteria pollutants
Source Status: Minor Source Operating Permit
Minor Source, under PSD
Minor Source, Section 112 of CAA

A.2 Emissions Units and Pollution Control Equipment Summary

This stationary source is approved to operate the following emissions units and pollution control devices:

- (a) Five (5) automotive glass surface roll coating operation lines, identified as Lines 1 through 5, each using roll coating method, and each with a maximum production rate of 1,800 units per hour, equivalent to a maximum of production rate of about 110,000 pounds of glass per hour.
- (b) One (1) pressure pot applicator with a maximum capacity of 1,300 parts per hour;
- (c) One (1) screen wash booth utilizing a distillation unit for recycling clean up solvent with maximum capacity of 1,800 parts per hour (or 0.47 pounds per hour);
- (d) Four (4) parts washers, identified as PW-1, PW-2, PW-3 and PW-4 all using Stoddard solvent with combined maximum capacity of 0.3 pounds per hour;
- (e) One (1) mold shop equipped with one (1) enclosed sandblaster, identified as B-1, for maintenance purpose. The sandblaster has a maximum blasting rate of 450 pounds per hour, uses aluminum oxide as media with particulate matter emissions controlled by a baghouse (B-H1) with internal HEPA filter ;
- (f) Two (2) natural gas fired boilers, both constructed in 1990, each with a heat input capacity of 16.75 MMBtu/hr;
- (g) Five (5) natural gas fired flame breakouts with a heat input capacity of 0.006 MMBtu/hr each;
- (h) Twenty-eight (28) natural gas fired radiant heaters each with a heat input capacity of 0.130 MMBtu/hr;

- (i) One (1) natural gas fired radiant heater with a heat input capacity of 0.075 MMBtu/hr;
- (j) Three (3) natural gas fired duct furnaces each with a heat input capacity of 0.150 MMBtu/hr;
- (k) Six (6) natural gas fired air conditioners each with a heat input capacity of 0.115 MMBtu/hr;
- (l) Eight (8) natural gas fired air conditioners, each with a heat input capacity of 0.180 MMBtu/hr;
- (m) Four (4) natural gas fired air conditioners, each with a heat input capacity of 0.220 MMBtu/hr;
- (n) Two (2) natural gas fired air conditioners, each with a heat input capacity of 0.017 MMBtu/hr;
- (o) One (1) natural gas fired air conditioner, with a heat input capacity of 0.011 MMBtu/hr;
- (p) Eight (8) natural gas fired makeup air units, each with a heat input capacity of 4.95 MMBtu/hr;
- (q) One (1) natural gas fired drying oven for tooling insulation with a heat input capacity of 0.74 MMBtu/hr; and
- (r) One (1) natural gas fired generator with a heat input capacity of 0.670 MMBtu/hr.

SECTION B GENERAL CONDITIONS

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1.1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

B.1 Permit No Defense [IC 13]

This permit to operate does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

B.2 Definitions

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations IC 13-11, 326 IAC 1-2, and 326 IAC 2-1.1-1 shall prevail.

B.3 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

B.4 Permit Term and Renewal [326 IAC 2-6.1-7(a)][326 IAC 2-1.1-9.5]

This permit is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions of this permit do not affect the expiration date.

The Permittee shall apply for an operation permit renewal at least ninety (90) days prior to the expiration date. If a timely and sufficient permit application for a renewal has been made, this permit shall not expire and all terms and conditions shall continue in effect until the renewal permit has been issued or denied.

B.5 Modification to Permit [326 IAC 2]

All requirements and conditions of this operating permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

B.6 Annual Notification [326 IAC 2-6.1-5(a)(5)]

- (a) Annual notification shall be submitted to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.
- (b) Noncompliance with any condition must be specifically identified. If there are any permit conditions or requirements for which the source is not in compliance at any time during the year, the Permittee must provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be, achieved. The notification must be signed by an authorized individual.
- (c) The annual notice shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in the format attached no later than March 1 of each year to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015

- (d) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

B.7 Preventive Maintenance Plan [326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit, including the following information on each emissions unit:
 - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

The PMP extension notification does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (b) The Permittee shall implement the PMPs, including any required record keeping, as necessary to ensure that failure to implement a PMP does not cause or contribute to an exceedance of any limitation on emissions or potential to emit.
- (c) A copy of the PMP's shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ,. IDEM, OAQ, may require the Permittee to revise its PMP whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMP does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (d) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation, Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.8 Permit Revision [326 IAC 2-5.1-3(e)(3)] [326 IAC 2-6.1-6]

- (a) Permit revisions are governed by the requirements of 326 IAC 2-6.1-6.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:
- Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015
- Any such application shall be certified by an “authorized individual” as defined by 326 IAC 2-1.1-1.
- (c) The Permittee shall notify the OAQ within thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]
- (d) No permit amendment or modification is required for the addition, operation or removal of a nonroad engine, as defined in 40 CFR 89.2.

**B.9 Inspection and Entry [326 IAC 2-5.1-3(e)(4)(B)] [326 IAC 2-6.1-5(a)(4)][IC 13-14-2-2]
[IC 13-30-3-1]**

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a permitted source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy, at reasonable times, any records that must be kept under this title or the conditions of this permit or any operating permit revisions;
- (c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect, at reasonable times, any processes, emissions units (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit or any operating permit revisions;
- (d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.10 Transfer of Ownership or Operation [326 IAC 2-6.1-6(d)(3)]

Pursuant to [326 IAC 2-6.1-6(d)(3)] :

- (a) In the event that ownership of this source is changed, the Permittee shall notify IDEM, OAQ, Permits Branch, within thirty (30) days of the change.
- (b) The written notification shall be sufficient to transfer the permit to the new owner by an notice-only change pursuant to 326 IAC 2-6.1-6(d)(3).
- (c) IDEM, OAQ, shall issue a revised permit.

The notification which shall be submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

B.11 Annual Fee Payment [326 IAC 2-1.1-7]

- (a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing.
- (b) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, I/M & Billing Section), to determine the appropriate permit fee.

SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) pounds per hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

C.2 Permit Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation of Permits), this permit to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

C.3 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.4 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

C.5 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted by using good engineering practices (GEP) pursuant to 326 IAC 1-7-3.

C.6 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

- (a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.
- (b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:
 - (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
 - (2) If there is a change in the following:
 - (A) Asbestos removal or demolition start date;
 - (B) Removal or demolition contractor; or
 - (C) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Asbestos Section, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification by an "authorized individual" as defined by 326 IAC 2-7-1(34).

- (e) Procedures for Asbestos Emission Control
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.
- (f) Demolition and renovation
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).

- (g) Indiana Accredited Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Accredited Asbestos inspector is not federally enforceable.

Testing Requirements

C.7 Performance Testing [326 IAC 3-6]

- (a) Compliance testing on new emissions units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date.

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual date.
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.8 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U.S. EPA.

Compliance Monitoring Requirements

C.9 Compliance Monitoring [326 IAC 2-1.1-11]

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

C.10 Monitoring Methods [326 IAC 3][40 CFR 60][40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60, Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

C.11 Compliance Response Plan - Preparation and Implementation

- (a) The Permittee is required to prepare a Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. A CRP shall be submitted to IDEM, OAQ upon request. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee, supplemented from time to time by the Permittee, maintained on site, and comprised of:
 - (1) Reasonable response steps that may be implemented in the event that a response step is needed pursuant to the requirements of Section D of this permit; and an expected timeframe for taking reasonable response steps.
 - (2) If, at any time, the Permittee takes reasonable response steps that are not set forth in the Permittee's current Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan, the Permittee shall amend its Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan to include such response steps taken.
- (b) For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition as follows:
 - (1) Reasonable response steps shall be taken as set forth in the Permittee's current Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan; or
 - (2) If none of the reasonable response steps listed in the Compliance Response Plan is applicable or responsive to the excursion, the Permittee shall devise and implement additional response steps as expeditiously as practical. Taking such additional response steps shall not be considered a deviation from this permit so long as the Permittee documents such response steps in accordance with this condition.
 - (3) If the Permittee determines that additional response steps would necessitate that the emissions unit or control device be shut down, the IDEM, OAQ shall be promptly notified of the expected date of the shut down, the status of the applicable compliance monitoring parameter with respect to normal, and the results of the actions taken up to the time of notification.
 - (4) Failure to take reasonable response steps shall be considered a deviation from the permit.
- (c) The Permittee is not required to take any further response steps for any of the following reasons:
 - (1) A false reading occurs due to the malfunction of the monitoring equipment and prompt action was taken to correct the monitoring equipment.

- (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for a minor permit modification to the permit, and such request has not been denied.
 - (3) An automatic measurement was taken when the process was not operating.
 - (4) The process has already returned or is returning to operating within "normal" parameters and no response steps are required.
- (d) Except as otherwise provided by a rule or provided specifically in Section D, all monitoring as required in Section D shall be performed when the emission unit is operating, except for time necessary to perform quality assurance and maintenance activities.

Record Keeping and Reporting Requirements

C.12 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.
- (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
- (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).
- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.13 General Record Keeping Requirements [326 IAC 2-6.1-5]

- (a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented when operation begins.

C.14 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

-
- (a) Reports required by conditions in Section D of this permit shall be submitted to:
- Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015
- (b) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.
- (c) Unless otherwise specified in this permit, any quarterly report required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. The report does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (d) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years.

SECTION D.1

DRAFT
FACILITY OPERATION CONDITIONS

Facility Description:

- (a) Five (5) automotive glass surface roll coating operation lines, identified as Lines 1 through 5, each using roll coating method, and each with a maximum production rate of 1,800 units per hour, equivalent to a maximum of production rate of about 110,000 pounds of glass per hour;
- (b) One (1) pressure pot applicator with a maximum capacity of 1,300 parts per hours;
- (c) One (1) screen wash booth utilizing a distillation unit for recycling clean up solvent with maximum capacity of 1,800 parts per hour (or 0.47 pounds per hour);
- (d) Four (4) parts washer, identified as PW-1, PW-2, PW-3 and PW-4 all using Stoddard solvent with combined maximum capacity of 0.3 pounds per hour;
- (e) One (1) mold shop equipped with one (1) enclosed sandblaster, identified as B-1, for maintenance purpose. The sandblaster has a maximum blasting rate of 450 pounds per hour, uses aluminum oxide as media with particulate matter emissions controlled by a baghouse (B-H1) with internal HEPA filter ;
- (f) Two (2) natural gas fired boilers, both constructed in 1990, each with a heat input capacity of 16.75 MMBtu/hr;
- (g) Five (5) natural gas fired flame breakouts with a heat input capacity of 0.006 MMBtu/hr each;
- (h) Twenty-eight (28) natural gas fired radiant heaters each with a heat input capacity of 0.130 MMBtu/hr;
- (i) One (1) natural gas fired radiant heater with a heat input capacity of 0.075 MMBtu/hr;
- (j) Three (3) natural gas fired duct furnaces each with a heat input capacity of 0.150 MMBtu/hr;
- (k) Six (6) natural gas fired air conditioners each with a heat input capacity of 0.115 MMBtu/hr;
- (l) Eight (8) natural gas fired air conditioners, each with a heat input capacity of 0.180 MMBtu/hr;
- (m) Four (4) natural gas fired air conditioners, each with a heat input capacity of 0.220 MMBtu/hr;
- (n) Two (2) natural gas fired air conditioners, each with a heat input capacity of 0.017 MMBtu/hr;
- (o) One (1) natural gas fired air conditioner, with a heat input capacity of 0.011 MMBtu/hr;
- (p) Eight (8) natural gas fired makeup air units, each with a heat input capacity of 4.95 MMBtu/hr;
- (q) One (1) natural gas fired drying oven for tooling insulation with a heat input capacity of 0.74 MMBtu/hr; and
- (r) One (1) natural gas fired generator with a heat input capacity of 0.670 MMBtu/hr.

Emission Limitations and Standards

D.1.1 Volatile Organic Compounds (VOC) Limitation [326 IAC 8-1-6]

Any change or modification which may increase potential emissions of VOC from any of the five (5) automotive glass surface roll coating lines to greater than 25 tons per year must be approved by the Office of Air Quality (OAQ) before such change can occurs.

D.1.2 Particulate Matter Limitation (PM) [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), particulate matter (PM) from the two (2) natural gas-fired boilers shall be limited by the following:

$$Pt = 1.09/Q^{0.26}$$

where: Pt = maximum allowable particulate matter (PM) emitted per MMBtu heat input
Q = total source max. indirect heater input = 16.75 + 16.75 = 33.5 MMBtu/hr

$$Pt = 1.09/33.5^{0.26} = 0.44 \text{ lbs PM/MMBtu}$$

Therefore, the PM emissions from each of the two (2) boilers are limited to 0.44 lbs PM/MMBtu.

D.1.3 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission rate from the sandblasting machine facilities shall not exceed 1.51 pounds per hour when operating at a process weight rate of 450 pounds per hour.

The pounds per hour limitation was calculated with the following equation:

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour;
and P = process weight rate in tons per hour

D.1.4 Volatile Organic Compounds (VOC) [326 IAC 8-3-2]

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), for cold cleaning operations constructed after January 1, 1980, the Permittee shall:

- (a) Equip the cleaner with a cover;
- (b) Equip the cleaner with a facility for draining cleaned parts;
- (c) Close the degreaser cover whenever parts are not being handled in the cleaner;
- (d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
- (e) Provide a permanent, conspicuous label summarizing the operation requirements;
- (f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

D.1.5 Volatile Organic Compounds (VOC) [326 IAC 8-3-5]

- (a) Pursuant to 326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control), for cold cleaner degreaser operations without remote solvent reservoirs constructed after July 1, 1990, the Permittee shall ensure that the following control equipment requirements are met:

- (1) Equip the degreaser with a cover. The cover must be designed so that it can be easily operated with one (1) hand if:
 - (A) The solvent volatility is greater than two (2) kiloPascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F));
 - (B) The solvent is agitated; or
 - (C) The solvent is heated.
 - (2) Equip the degreaser with a facility for draining cleaned articles. If the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), then the drainage facility must be internal such that articles are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.
 - (3) Provide a permanent, conspicuous label which lists the operating requirements outlined in subsection (b).
 - (4) The solvent spray, if used, must be a solid, fluid stream and shall be applied at a pressure which does not cause excessive splashing.
 - (5) Equip the degreaser with one (1) of the following control devices if the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius (48.9°C) (one hundred twenty degrees Fahrenheit (120°F)):
 - (A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.
 - (B) A water cover when solvent is used is insoluble in, and heavier than, water.
 - (C) Other systems of demonstrated equivalent control such as a refrigerated chiller or carbon adsorption. Such systems shall be submitted to the U.S. EPA as a SIP revision.
- (b) Pursuant to 326 IAC 8-3-5(b) (Cold Cleaner Degreaser Operation and Control), the owner or operator of a cold cleaning facility construction of which commenced after July 1, 1990, shall ensure that the following operating requirements are met:
- (1) Close the cover whenever articles are not being handled in the degreaser.
 - (2) Drain cleaned articles for at least fifteen (15) seconds or until dripping ceases.
 - (3) Store waste solvent only in covered containers and prohibit the disposal or transfer of waste solvent in any manner in which greater than twenty percent (20%) of the waste solvent by weight could evaporate.

D.1.6 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and any control devices.

Compliance Monitoring Requirements

D.1.7 Particulate Matter (PM)

In order to comply with D.1.3, the baghouse for PM control shall be in operation at all times when the one (1) sandblaster is in operation.

Record Keeping and Reporting Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.1.8 Record Keeping Requirements

- (a) To document compliance with Condition D.1.1, the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken daily and shall be complete and sufficient to establish compliance with the VOC usage limits and/or the VOC emission limits established in Condition D.1.1.
 - (1) The VOC content of each coating material and solvent used.
 - (2) The amount of coating material and solvent less water used on daily basis.
 - (A) Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used.
 - (B) Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents.
 - (3) The cleanup solvent usage for each month;
 - (4) The total VOC usage for each month; and
 - (5) The weight of VOC emitted for each compliance period.
- (b) Pursuant to the New Source Performance Standards (NSPS), Part 60.48c (Reporting and record keeping requirements) (g), the owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day. These records shall be kept for the past 36 month period and made available upon request to the Office of Air Quality (OAQ).
- (c) To document compliance with Condition D.1.2, the Permittee shall maintain records in accordance with (1) and (2) below.
 - (1) Calendar dates covered in the compliance determination period;
 - (2) To certify compliance when burning natural gas only, the Permittee shall maintain records of fuel used.

The Permittee shall retain records of all recording/monitoring data and support information for a period of five (5) years, or longer if specified elsewhere in this permit, from the date of the monitoring sample, measurement, or report. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit.

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- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

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INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH

MINOR SOURCE OPERATING PERMIT
ANNUAL NOTIFICATION

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

Company Name:	Pilkington North America, Inc.
Address:	300 Northridge Drive, Shelbyville, Indiana 46176
City:	Shelbyville
Phone #:	317-392-7000
MSOP #:	145-14878-00020

I hereby certify that [source] is ☒ still in operation.
☐ no longer in operation.

I hereby certify that [source] is ☒ in compliance with the requirements of MSOP 145-14878-00020.
☐ not in compliance with the requirements of MSOP 145-14878-00020.

Authorized Individual (typed):
Title:
Signature:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

DRAFT

MALFUNCTION REPORT

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
FAX NUMBER - 317 233-5967**

**This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6
and to qualify for the exemption under 326 IAC 1-6-4.**

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT 25 TONS/YEAR PARTICULATE MATTER ?____, 25 TONS/YEAR SULFUR DIOXIDE ?____, 25 TONS/YEAR NITROGEN OXIDES?____, 25 TONS/YEAR VOC ?____, 25 TONS/YEAR HYDROGEN SULFIDE ?____, 25 TONS/YEAR TOTAL REDUCED SULFUR ?____, 25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?____, 25 TONS/YEAR FLUORIDES ?____, 100TONS/YEAR CARBON MONOXIDE ?____, 10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT ?____, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?____, 1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?____, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?____. EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY: _____ PHONE NO. () _____
LOCATION: (CITY AND COUNTY) _____
PERMIT NO. _____ AFS PLANT ID: _____ AFS POINT ID: _____ INSP: _____
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: ____/____/19____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE ____/____/19____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO₂, VOC, OTHER: _____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES: _____

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____

INTERIM CONTROL MEASURES: (IF APPLICABLE) _____

DRAFT

MALFUNCTION REPORTED BY: _____ TITLE: _____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

*SEE PAGE 2

PAGE 1 OF 2

**Please note - This form should only be used to report malfunctions
applicable to Rule 326 IAC 1-6 and to qualify for
the exemption under 326 IAC 1-6-4.**

326 IAC 1-6-1 Applicability of rule

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

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Authorized Individual:	Peter J. Clark, Assistant Plant Manager	John Barnes, Plant Manager.
Source Address:	300 Northridge Drive, Shelbyville, Indiana 46176	
Mailing Address:	300 Northridge Drive, Shelbyville, Indiana 46176	
General Source Phone:	(317) 392-7000	
SIC Code:	3231	
County Location:	Shelby	
Source Location Status:	Attainment for all criteria pollutants	
Source Status:	Minor Source Operating Permit	
	Minor Source, under PSD	
	Minor Source, Section 112 of CAA	

Comment #2

C.1, D.1.2, and D.1.3 - Particulate Matter Emission Limitation

With respect to particulate emission limitations for sources of indirect heating and for manufacturing processes, please confirm that Pilkington is not subject to a monitoring requirement (e.g., performance testing via U.S. EPA Method 5).

Response #2

“C” Section conditions are general source-wide conditions. The “D” sections will contain condition specific to emission units listed under that section. Conditions D.1.2 and D.1.3 are emission limitations. The only required monitoring for this “D” section is listed in Condition D.1.7 regarding the sandblaster (addressed by Condition D.1.3). However, the Permittee is required to maintain records to document compliance with condition D.1.2.

Comment #3

C.3 Opacity

With respect to the opacity limitations, please confirm that Pilkington is not subject to a monitoring requirements (e.g., opacity measurements via U.S. EPA Method 9).

Response #3

No compliance monitoring is required for the Permittee to show compliance with condition C.3. However, the permittee is required to provide evidence that it is in compliance with the requirements of condition C.3 when requested by OAQ.

Comment #4

D.1.6 - Preventive Maintenance Plan

Please clarify which facilities and associated control devices listed in Section D.1 to include Preventive Maintenance Plan.

Response #4

Preventive Maintenance Plan is required for the significant activities (items (a) to (e) of Section D.1) Therefore, the condition D.1.6 has been revised as follows:

D.1.6 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for ~~this facility~~ **the facilities listed under (a) through (e) of Section D.1** and any control devices.

Comment #5

D.1.8 - Record Keeping Requirements

Please change the VOC record keeping requirement from daily to monthly. In a Notice-only change (145-11291-00020) dated November 30, 1999, based on the fact that the five surface coating lines are separate from each other, the IDEM office of Air Management removed VOC usage limitations and record keeping requirements from the operating permit. However, Pilkington has continued to record usage of VOC-containing materials on a monthly basis.

In addition, please change the fuel usage recording requirement specified in the permit from daily to monthly. The record keeping requirement discussed on Page 5 of the TSD for the amounts of fuel combusted is monthly, as desired.

Response #5

OAQ agrees to allow the Permittee to show compliance with the requirements of Condition D.1.1 by keeping monthly instead daily VOC usages. Therefore the record keeping requirements condition D.1.8 has been revised as follows:

D.1.8 Record Keeping Requirements

- (a) To document compliance with Condition D.1.1, the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken ~~daily~~ **monthly** and shall be complete and sufficient to establish compliance with the VOC usage limits and/or the VOC emission limits established in Condition D.1.1.
 - (1) The VOC content of each coating material and solvent used.
 - (2) The amount of coating material and solvent less water used on ~~daily~~ **monthly** basis.
 - (A) Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used.
 - (B) Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents.
 - (3) The cleanup solvent usage for each month;
 - (4) The total VOC usage for each month; and
 - (5) The weight of VOC emitted for each compliance period.
- (b) Pursuant to the New Source Performance Standards (NSPS), Part 60.48c (Reporting and record keeping requirements) (g), the owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day. These records shall be kept for the past 36 month period and made available upon request to the Office of Air Quality (OAQ).
- (c) To document compliance with Condition D.1.2, the Permittee shall maintain records in accordance with (1) and (2) below.
 - (1) Calendar dates covered in the compliance determination period;
 - (2) To certify compliance when burning natural gas only, the Permittee shall maintain records of fuel used.

The Permittee shall retain records of all recording/monitoring data and support information for a period of five (5) years, or longer if specified elsewhere in this permit, from the date of the monitoring sample, measurement, or report. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit.

- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Minor Source Operating (MSOP) Permit

Source Background and Description

Source Name: Pilkington North America, Inc.
Source Location: 300 Northridge Drive, Shelbyville, IN 46176
County: Shelby
SIC Code: 3231
Operation Permit No.: MSOP 145-14878-00020
Permit Reviewer: Femi Ogunsola/EVP

The Office of Air Quality (OAQ) has reviewed an application from Pilkington North America, Inc. relating to the operation of an automobile glass fabrication operation.

History

This permit will also change the name of the source from Libbey-Owens-Ford to Pilkington North America, Inc.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

- (a) Five (5) automotive glass surface roll coating operation lines, identified as Lines 1 through 5, each using roll coating method, and each with a maximum production rate of 1,800 units per hour, equivalent to a maximum of production rate of about 110,000 pounds of glass per hour;
- (b) One (1) pressure pot applicator with a maximum capacity of 1,300 parts per hours;
- (c) One (1) screen wash booth utilizing a distillation unit for recycling clean up solvent with maximum capacity of 1,800 parts per hour (or 0.47 pounds per hour);
- (d) Four (4) parts washer, identified as PW-1, PW-2, PW-3 and PW-4 all using Stoddard solvent with combined maximum capacity of 0.3 pounds per hour;
- (e) One (1) mold shop equipped with one (1) enclosed sandblaster, identified as B-1, for maintenance purpose. The sandblaster has a maximum blasting rate of 450 pounds per

hour, uses aluminum oxide as media with particulate matter emissions controlled by a baghouse (B-H1) with internal HEPA filter ;

- (f) Two (2) natural gas fired boilers, both constructed in 1990, each with a heat input capacity of 16.75 MMBtu/hr;
- (g) Five (5) natural gas fired flame breakouts with a heat input capacity of 0.006 MMBtu/hr each;
- (h) Twenty-eight (28) natural gas fired radiant heaters each with a heat input capacity of 0.130 MMBtu/hr;
- (i) One (1) natural gas fired radiant heater with a heat input capacity of 0.075 MMBtu/hr;
- (j) Three (3) natural gas fired duct furnaces each with a heat input capacity of 0.150 MMBtu/hr;
- (k) Six (6) natural gas fired air conditioners each with a heat input capacity of 0.115 MMBtu/hr;
- (l) Eight (8) natural gas fired air conditioners, each with a heat input capacity of 0.180 MMBtu/hr;
- (m) Four (4) natural gas fired air conditioners, each with a heat input capacity of 0.220 MMBtu/hr;
- (n) Two (2) natural gas fired air conditioners, each with a heat input capacity of 0.017 MMBtu/hr;
- (o) One (1) natural gas fired air conditioner, with a heat input capacity of 0.011 MMBtu/hr;
- (p) Eight (8) natural gas fired makeup air units, each with a heat input capacity of 4.95 MMBtu/hr;
- (q) One (1) natural gas fired drying oven for tooling insulation with a heat input capacity of 0.74 MMBtu/hr; and
- (r) One (1) natural gas fired generator with a heat input capacity of 0.670 MMBtu/hr.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted facilities operating at this source during this review process.

Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

- (a) Construction Permit (73) 1888, issued on August 2, 1990;
- (b) Registration 145-6095, issued August 14, 1996;
- (c) Operation Permit 145-6142-00020, issued on September 25, 1996;
- (d) Exemption 145-8998-00020, issued on October 23, 1997; and

- (e) Notice-only change 145-11281-00020, issued on November 30, 1999.

All conditions from previous approvals were incorporated into this permit.

Enforcement Issue

Any existing source that has the potential to emit criteria pollutants within the ranges of 25 tons/yr and 100 tons/yr and has a valid air operating permit must apply for approval under this rule no later than 90 days prior to the expiration date of that permit. Pilkington North America, Inc. was issued Operation Permit 145-6142-00020 on September 25, 1996. The expiration date of the permit was September 24, 2001. Pilkington applied for a renewal on September 25, 2001. IDEM is aware of this and will take appropriate action.

Recommendation

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

A complete application for the purposes of this review was received on September 25, 2001.

Emission Calculations

See Appendix A of this document for detailed emissions calculations pages 1 through 10 of Appendix A.

Potential To Emit (of Source or Revision) Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	Potential To Emit (tons/year)
PM	22.7
PM-10	18.1
SO ₂	0.2
VOC	80.1
CO	30.1
NO _x	35.8

HAP's	Potential To Emit (tons/year)
Xylene	0.14
Ethylbenzene	0.03
Chlorobenzene	0.00
Glycol Ethers	2.86
TOTAL	3.03

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of VOC and NO_x are greater than or equal to 25 tons per year and less than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-6.1.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and/or the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-6.1.
- (c) Fugitive Emissions
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

County Attainment Status

The source is located in Shelby County.

Pollutant	Status
PM-10	attainment
SO ₂	attainment
NO ₂	attainment
Ozone	attainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Shelby County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) Shelby County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (c) Fugitive Emissions
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2, or 326 IAC 2-3 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

Existing Source (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
-----------	-----------------------

PM	0.9
PM10	2.9
SO ₂	0.2
VOC	80.1
CO	30.1
NO _x	35.8

- (a) This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories.
- (b) These emissions were based on emission calculations derived from information provided in the application submitted by the Pilkington North America, Inc. received on September 25, 2001.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source, including the emissions from this permit MSOP 145-14878-00020, is still not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

This status is based on all the air approvals issued to the source. This status has been verified by the OAQ inspector assigned to the source.

Federal Rule Applicability

- (a) The two (2) natural gas fired boilers, constructed in 1990, each with a heat input capacity of 16.75 MMBtu per hour, are subject to the New Source Performance Standard, 326 IAC 12, (40 CFR 60.40c, Subpart Dc). However, since the two (2) boilers only combust natural gas, they are subject only to the record keeping and reporting requirements under 40 CFR 60.48c (a) and (g). The applicable record keeping and reporting requirements are as follows:
 - (1) The Permittee shall record and maintain records for a period of two years of the amounts of each fuel combusted during each month.
- (b) The four (4) parts washer, identified as PW-1, PW-2, PW-3 and PW-4, are not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs), Subpart T because they do not use any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride or chloroform.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is located in Shelby County and the potential to emit for each of all criteria pollutants is less than one hundred (100) tons per year. Therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The operation of the surface coating and pressure pot processes will emit less than 10 tons per year of a single HAP or 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 6-3-2 (Process Operations)

Pursuant to OP 145-6142-00020, issued on September 25, 1996, the particulate matter (PM) from the shot blaster shall not exceed 1.51 pounds per hour when operating at a process weight rate of 450 pounds per hour. The pounds per hour limitation was calculated with the following equation:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

$$E = 4.10 (450/2000)^{0.67} = 1.51 \text{ lb/hr}$$

The baghouse shall be in operation at all times the shot blasting machine is in operation, in order to comply with this limit.

The five (5) surface coating operations are not subject to this rule, because the operations utilize roll coating as the method of application, and have no overspray.

Pursuant to 326 IAC 6-3-2(4)(2), the allowable particulate matter emissions rate from any process not already regulated by 326 IAC 6-1 or any New Source Performance Standard, and which has a maximum process weight rate less than 100 pounds per hour shall not exceed 0.551 pounds per hour.

326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating)

The two (2) natural gas fired boilers, both constructed in 1990, each with a heat input capacity of 16.75 MMBtu per hour, are subject to the particulate matter limitations of 326 IAC 6-2. Pursuant to this rule, the boilers are limited by the following equation from 326 IAC 6-2-4:

$$Pt = 1.09/Q^{0.26}$$

where: Pt = maximum allowable particulate matter (PM) emitted per MMBtu heat input
Q = total source max. indirect heater input = 16.75 + 16.75 = 33.5 MMBtu/hr

$$Pt = 1.09/33.5^{0.26} = 0.44 \text{ lbs PM/MMBtu}$$

Therefore, the PM emissions from each of the two (2) boilers are limited to 0.44 lbs PM/MMBtu

Compliance calculation:

$(0.28 \text{ tons PM/yr}) * (\text{hr}/33.5 \text{ MMBtu}) * (\text{yr}/8,760 \text{ hrs}) * (2,000 \text{ lbs/ton}) = 1.91\text{E-}3 \text{ lbs PM/MMBtu}$

Actual lbs PM/MMBtu (1.91E-3) is less than allowable lbs PM/MMBtu (0.44), therefore the boilers will comply with the requirements of 326 IAC 6-2-4.

326 IAC 8-1-6 (New Facilities, General Reduction Requirements)

Pursuant to 326 IAC 8-1-6, new facilities located anywhere in the state that were constructed on or after January 1, 1980, which have a potential to emit (PTE) VOC at 25 tons or more per year, and which are not otherwise regulated by another provision of Article 8, are subject to the rule requirements. The five (5) surface roll coating operations are not subject to this rule because each operation is mutually exclusive and each has the potential to emit less than 25 tons per year of VOC.

Compliance Requirements

Permits issued under 326 IAC 2-6 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-6.1-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this source are as follows:

- (1) There are no Compliance Monitoring Requirements applicable to the sand blaster the allowable PM emissions from this unit is less than ten (10) pounds per hour.

Conclusion

The operation of this automobile glass fabrication operation shall be subject to the conditions of the attached proposed **Minor Source Operating Permit 145-14878-00020**.

Appendix A: Emission Calculations

Company Name: Pilkington North America, Inc.
Address City IN Zip: 300 Northridge Drive, Shelbyville, IN 46176
MSOP: 145-14878
Plt ID: 145-00020
Reviewer: FO/EVP
Date: 07/30/2003

Uncontrolled Potential Emissions (tons/year)						
Emissions Generating Activity						
Pollutant	Surface Coating Operations	Pressure Pot Operation	Degreasing Operations	Abrasive Blasting Operations	Natural Gas Combustion	TOTAL
PM	0.00	0.00	0.00	22.02	0.70	22.7
PM10	0.00	0.00	0.00	15.42	2.70	18.1
SO2	0.00	0.00	0.00	0.00	0.20	0.2
NOx	0.00	0.00	0.00	0.00	35.80	35.8
VOC	76.65	0.28	1.20	0.00	2.00	80.1
CO	0.00	0.00	0.00	0.00	30.10	30.1
total HAPs	2.86	0.17	0.00	0.00	0.68	3.7
worst case single HAP	2.86	0.14	0.00	0.00	0.64	3.6
Total emissions based on rated capacity at 8,760 hours/year.						
Controlled Potential Emissions (tons/year)						
Emissions Generating Activity						
Pollutant	Surface Coating Operations	Pressure Pot Operation	Degreasing Operations	Abrasive Blasting Operations	Natural Gas Combustion	TOTAL
PM	0.00	0.00	0.00	0.22	0.70	0.9
PM10	0.00	0.00	0.00	0.15	2.70	2.9
SO2	0.00	0.00	0.00	0.00	0.20	0.2
NOx	0.00	0.00	0.00	0.00	35.80	35.8
VOC	76.65	0.28	1.20	0.00	2.00	80.1
CO	0.00	0.00	0.00	0.00	30.10	30.1
total HAPs	2.86	0.17	0.00	0.00	0.68	3.7
worst case single HAP	2.86	0.14	0.00	0.00	0.64	3.6
Total emissions based on rated capacity at 8,760 hours/year, after control.						

**Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations**

Page 2 of 10 TSD App A

**Company Name: Pilkington North America, Inc.
Address City IN Zip: 300 Northridge Drive, Shelbyville, IN 46176
MSOP: 145-14878
Plt ID: 145-00020
Reviewer: Femi Ogunsola /EVP
Date: 07/17/2003**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
FRIT PAINTS (Print Room #1)	20.00	43.00%	0.0%	43.0%	0.0%	75.00%	0.00010	1800.0	8.60	8.60	1.55	37.15	6.78	0.00	11.47	100%
FRIT PAINTS (Print Rooms #2 & #3)	20.00	43.00%	0.0%	43.0%	0.0%	75.00%	0.00030	1800.0	8.60	8.60	4.64	111.46	20.34	0.00	11.47	100%
FRIT PAINTS (Print Rooms #4 & #5)	20.00	43.00%	0.0%	43.0%	0.0%	75.00%	0.00030	1800.0	8.60	8.60	4.64	111.46	20.34	0.00	11.47	100%
FRIT PAINTS (Print Room #6)	20.00	43.00%	0.0%	43.0%	0.0%	75.00%	0.00010	1800.0	8.60	8.60	1.55	37.15	6.78	0.00	11.47	100%
FRIT PAINTS (Print Room #7& #8)	20.00	43.00%	0.0%	43.0%	0.0%	72.00%	0.00030	1800.0	8.60	8.60	4.64	111.46	20.34	0.00	11.94	100%
Clean-Up Solvent (ICC-845)	8.10	47.00%	0.0%	47.0%	0.0%	71.00%	0.00007	1800.0	3.81	3.81	0.47	11.35	2.07	0.00	5.36	100%

State Potential Emissions

Add worst case coating to all solvents

17.50

420.02

76.65

0.00

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)

Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)

Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)

Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)

Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)

Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)

Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)

Total = Worst Coating + Sum of all solvents used

**Appendix A: Emissions Calculations
VOC and Particulate
From Pressure Pot Operations**

Page 3 of 10 TSD App A

**Company Name: Pilkington North America, Inc.
Address City IN Zip: 300 Northridge Drive, Shelbyville, IN 46176
MSOP: 145-14878
Pit ID: 145-00020
Reviewer: Femi Ogunsola /EVP
Date: 07/30/2003**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximu m (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Adhesive (3M 4298 UV)	6.84	94.00%	0.0%	94.0%	0.0%	6.00%	0.00001	1300.0	6.43	6.43	0.06	1.54	0.28	0.00	107.16	100%

State Potential Emissions

Add worst case coating to all solvents

0.06

1.54

0.28

0.00

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

**Appendix A: Emissions Calculations
VOC and Particulate
From Degreasing Operations**

Page 4 of 10 TSD App A

**Company Name: Pilkington North America, Inc.
Address City IN Zip: 300 Northridge Drive, Shelbyville, IN 46176
MSOP: 145-14878
Plt ID: 145-00020
Reviewer: Femi Ogunsola/EVP
Date: 07/30/2003**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non- Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Stoddard Solvent	6.57	100.00%	0.0%	100.0%	0.0%	0.00%	1.00000	0.042	6.57	6.57	0.27	6.57	1.20	0.00	#DIV/0!	100%

State Potential Emissions	Add worst case coating to all solvents	0.27	6.57	1.20	0.00
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NOTE: Degreasing operation consists of four (4) parts washers identified as PW-1, PW-2, PW-3 and PW-4

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

Appendix A: Emission Calculations
HAP Emission Calculations

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Company Name: Pilkington North America, Inc.
Address City IN Zip: 300 Northridge Drive, Shelbyville, IN 46176
MSOP: 145-14878
Pit ID: 145-00020
Permit Reviewer: Femi Ogunsola/EVP
Date: 07/30/2003

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Ethyl Benzene	Weight % ChloroBenzene	Weight % Glycol Ethers	Xylene Emissions (ton/yr)	Ethylbenzene Emissions (ton/yr)	Chlorobenzene Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Total HAPs Emission (ton/yr)
Clean-Up Solvent (ICC-845)	8.10	0.000069	1800.00	0.00%	0.00%	0.00%	65.00%	0.00	0.00	0.00	2.86	2.86
3M Brand Adhesion Promoter #4298UV	6.84	0.000010	1300.00	35.00%	7.00%	0.50%	0.00%	0.14	0.03	0.00	0.00	0.17
Total State Potential Emissions								0.14	0.03	0.00	2.86	3.03

METHODOLOGY

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

Appendix A: Emission Calculations

Abrasive Blasting - Confined

Company Name: Pilkington North America, Inc.
Address City IN Zip: 300 Northridge Drive, Shelbyville, IN 46176
MSOP: 145-14878
Pit ID: 145-00020
Reviewer: Femi Ogunsola/EVP
Date: 07/30/2003

Table 1 - Emission Factors for Abrasives

Abrasive	Emission Factor	
	lb PM / lb abrasive	lb PM10 / lb PM
Sand	0.041	0.70
Grit	0.010	0.70
Steel Shot	0.004	0.86
Other	0.010	

Table 2 - Density of Abrasives (lb/ft3)

Abrasive	Density (lb/ft3)
Al oxides	160
Sand	99
Steel	487

Table 3 - Sand Flow Rate (FR1) Through Nozzle (lb/hr)

Flow rate of Sand Through a Blasting Nozzle as a Function of Nozzle pressure and Internal Diameter

Internal diameter, in	Nozzle Pressure (psig)							
	30	40	50	60	70	80	90	100
1/8	28	35	42	49	55	63	70	77
3/16	65	80	94	107	122	135	149	165
1/4	109	138	168	195	221	255	280	309
5/16	205	247	292	354	377	420	462	507
3/8	285	355	417	477	540	600	657	720
7/16	385	472	560	645	755	820	905	940
1/2	503	615	725	835	945	1050	1160	1265
5/8	820	990	1170	1336	1510	1680	1850	2030
3/4	1140	1420	1670	1915	2160	2400	2630	2880
1	2030	2460	2900	3340	3780	4200	4640	5060

Calculations

Adjusting Flow Rates for Different Abrasives and Nozzle Diameters

Flow Rate (FR) = Abrasive flow rate (lb/hr) with internal nozzle diameter (ID)

FR1 = Sand flow rate (lb/hr) with internal nozzle diameter (ID1) From Table 3 =

D = Density of abrasive (lb/ft3) From Table 2 =

D1 = Density of sand (lb/ft3) =

ID = Actual nozzle internal diameter (in) =

ID1 = Nozzle internal diameter (in) from Table 3 =

354
130
99
0.325
0.3125

Flow Rate (FR) (lb/hr) = 502.780 per nozzle

Uncontrolled Emissions (E, lb/hr)

EF = emission factor (lb PM/ lb abrasive) From Table 1 =

FR = Flow Rate (lb/hr) =

w = fraction of time of wet blasting =

N = number of nozzles =

0.010
502.780
0 %
1

Uncontrolled PM Emissions =	5.03 lb/hr
	22.02 ton/yr
Uncontrolled PM10 Emissions =	3.52 lb/hr
	15.42 ton/yr
Controlled PM Emissions =	0.05 lb/hr
	0.22 ton/yr
Controlled PM10 Emissions =	0.04 lb/hr
	0.15 ton/yr

NOTE: The sandblaster is controlled by a baghouse with a control efficiency of 99%

METHODOLOGY

Emission Factors from STAPPA/ALAPCO "Air Quality Permits", Vol. I, Section 3 "Abrasive Blasting" (1991 edition)

Ton/yr = lb/hr X 8760 hr/yr X ton/2000 lbs

Flow Rate (FR) (lb/hr) = FR1 x (ID/ID1)2 x (D/D1)

E = EF x FR x (1-w/200) x N

w should be entered in as a whole number (if w is 50%, enter 50)

**Appendix A: Emissions Calculations
Natural Gas Combustion Only (Boilers)
MM BTU/HR <100**

Company Name: Pilkington North America, Inc.
Address City IN Zip: 300 Northridge Drive, Shelbyville, IN 46176
MSOP: 145-14878
Plt ID: 145-00020
Reviewer: Femi Ogunsola/ EVP
Date: 07/30/2003

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

33.5

293.5

Facilities include two(2) natural gas fired boilers with a heat input capacity of 16.75 MMBTU/Hr each.

Pollutant

	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0	5.5	84.0
				**see below		
Potential Emission in tons/yr	0.3	1.1	0.1	14.7	0.8	12.3

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See next page for HAPs emissions calculations.

Appendix A: Emissions Calculations**Natural Gas Combustion Only****MM BTU/HR <100****Small Industrial Boiler****HAPs Emissions****Company Name: Pilkington North America, Inc.****Address City IN Zip: 300 Northridge Drive, Shelbyville, IN 46176****MSOP: 145-14878****Plt ID: 145-00020****Reviewer: Femi Ogunsola/ EVP****Date: 07/18/2003****HAPs - Organics**

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	3.081E-04	1.761E-04	1.100E-02	2.641E-01	4.989E-04

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	7.337E-05	1.614E-04	2.054E-04	5.576E-05	3.081E-04

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100**

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Company Name: Pilkington North America, Inc.
Address City IN Zip: 300 Northridge Drive, Shelbyville, IN 46176
MSOP: 145-14878
Pit ID: 145-00020
Reviewer: Femi Ogunsola/ EVP
Date: 07/30/2003

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

48.26

422.8

Facilities	MMBTU/hr
Flame Breakouts (5)	0.030
Radiant Heaters (28)	3.640
Radiant Heater (1)	0.075
Furnaces (3)	0.450
Air Conditioners (6)	0.690
Air Conditioners (8)	1.440
Air Conditioners (4)	0.880
Air Conditioners (2)	0.034
Air Conditioners (1)	0.011
Air MakeUp units (8)	39.600
Drying Oven (1)	0.740
Generator	0.670
Total	48.260

Pollutant

Emission Factor in lb/MMCF	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.4	1.6	0.1	21.1	1.2	17.8

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03

(SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is
 See next page for HAPs emissions calculations.

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100**

Page 10 of 10 TSD App A

HAPs Emissions

Company Name: Pilkington North America, Inc.
Address City IN Zip: 300 Northridge Drive, Shelbyville, IN 46176
MSOP: 145-14878
Pit ID: 145-00020
Reviewer: Femi Ogunsola/ EVP
Date: 07/18/2003

HAPs - Organics

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	4.439E-04	2.537E-04	1.585E-02	3.805E-01	7.187E-04

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	1.057E-04	2.325E-04	2.959E-04	8.032E-05	4.439E-04

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.